**DSR notes**

**by Jan Rumble and Nat Nichols**

The author gave an overview of the changes to assemblages and the associated tiers: DSR in Central GOA (CG)/Western GOA (WG)/West Yakutat (WY) is Tier 6; DSR except yelloweye rockfish (YE) in Southeast Outside is Tier 6 and YE in SEO is Tier 5 with two-index multi-area random effects model (REMA). There were some updates to the input data including updated ADFG ROV data for NSEO and YAK; because of staffing, equipment and funding, no ROV surveys will be conducted going forward.

The changes to the model: including DSR species in WG/CG/WY assessment, which was previously in the GOA Other Rockfish, all of these species are managed as Tier 6. The biggest change to the model was the YE natural mortality value, from 0.02 to 0.044, which leads to a more than doubling of the ABC and OFL. In addition, the IPHC longline survey CPUE index was standardized and kg per hook was used; this is secondary index of abundance and spatially stratified. SEO assessment was done for YE and then added in the ABC for other DSR species.

The author noted that if the current DSR split out had been done from 2020-2024, the CG/WG/WY DSR catches would have been above the ABC and OFL. Industry commented that pre-2020 catches should be examined because these would have been lower and not exceeded ABC and OFLs. SEO DSR catch includes commercial, subsistence, and recreational fisheries.

There were questions about the stock assessment responsibilities between the State of Alaska (SOA) and NOAA/NMFS; who is doing this assessment? Caitlin Stern from SOA and Kristen Omori from NOAA/NMFS are conducting this joint assessment.

**Plan Team:** There was discussion on IPHC CPUE standardization, suggestions from **PT** members included treating the data as compositional data and using information about total catch of other species; examining target versus non target versus empty hooks. Also, one team member recommended using the mode instead of the median from the standard GAM package. Also discussed, because of the loss of the ROV data, IPHC longline CPUE will be more heavily relied on, and because of this, this survey should be examined more closely. IPHC is dropping some of their survey stations in the future which may have an effect on estimates, looking at the stations that are dropped and the composition of the catch is important along station distribution. There has been a large reduction of stations in the SE part of the IPHC survey; this will negatively impact the assessment.

**Author:** The CIE recommendation changed natural mortality from 0.02 to 0.044 which would increase the YE biomass by 42% from last assessment; only recommending a reduction in the max ABC for YE not for all DSR. The author recommended reducing the resulting ABC with this new mortality rate by 20% because this newly calculated biomass resulted in a drastic increase in ABC and was also concerned about the lack of ROV generated estimates in the future.

The overall level of risk for the CG/WG/WY DSR was level 1 with no recommendation by the author for an ABC reduction. The author rated SEO DSR Level 2 overall because of lack of survey data, rapid changes in stock abundance (of a long-lived species and increased bycatch harvest in the longline halibut fishery (the only allowed harvest of YE). Because of this Level 2 overall risk level, the author recommended a 20% reduction in the YE ABC.

**Plan Team**: The PT discussed the Level 2 Fishery Performance Considerations and advised that if the CPUE had decreased in the fishery, this may lead to concerns but increased catch without this kind of CPUE metric would not merit Level 2 in this category.

There was lengthy discussion over this large change in natural mortality used for YE; they are a long-lived species, if this recommended natural mortality rate was used, this change would be substantial. There is still an increase in ABC even with the old natural mortality.

**The Plan Team recommended continuing to use M = 0.02 and not 0.044, which was recommended by the author based on the CIE.** The Plan Team noted that, because SEO YE rockfish is managed as a Tier 5 stock, with F\_OFL = M and F\_ABC = 0.75 \* F\_OFL, a change in the value of M has a large impact on reference points and must have strong justification. The historically used value, M = 0.02, is based on a catch-curve analysis of YE rockfish age data (Green et al. 2015) and there is currently no reason to doubt the validity of this analysis. Jim Thorson noted that his recent paper presents a phylogenetically informed method for estimating M based on longevity and/or growth data that could be applied to this stock (Thorson 2024). The PT concluded that more exploration of alternative methods calculating M for SEO YE rockfish is required before a shift away from M = 0.02 can be justified. Also, an ABC increase using stair step has been recommended and implemented with other assessments, this could be another option for the ABC/OFL for YE.

**Other Plan Team Discussion:** There were comments from PT members that there is not a good reason to use the GAM which is recommended by the CIE review. Migrating from REMA to surplus production model may be straight forward. Phil Joy (SOA) is still working on the surplus production model and hopes to have it ready in the future. SEO YE may be going back to Tier 6 because of the lack of survey.